

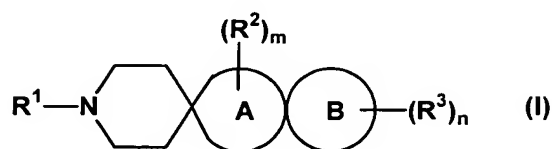
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

AMENDED CLAIMS IN US

1. (Original) A spiroheterocyclic ring derivatives of the formula (I)



wherein R¹ is:

- (1) hydrogen,
- (2) C1-18 alkyl,
- (3) C2-18 alkenyl,
- (4) C2-18 alkynyl,
- (5) -COR⁶,
- (6) -CONR⁷R⁸,
- (7) -COOR⁹,
- (8) -SO₂R¹⁰,
- (9) -COCOOR¹¹,
- (10) -CONR¹²COR¹³,
- (11) Cyc 1, or
- (12) C1-18 alkyl, C2-18 alkenyl or C2-18 alkynyl substituted by 1-5 substituent(s) selected from (a) halogen, (b) -CONR⁷R⁸, (c) -COOR⁹, (d) -OR¹⁴, (e) -SR¹⁵, (f) -NR¹⁶R¹⁷, (g) -

$\text{NR}^{18}\text{COR}^{19}$, (h) $-\text{SO}_2\text{NR}^{20}\text{R}^{21}$, (i) $-\text{OCOR}^{22}$, (j) $-\text{NR}^{23}\text{SO}_2\text{R}^{24}$, (k) $-\text{NR}^{25}\text{COOR}^{26}$, (l) $-\text{NR}^{27}\text{CONR}^{28}\text{R}^{29}$, (m) Cyc 1, (n) keto or (o) $-\text{N}(\text{SO}_2\text{R}^{24})_2$,

wherein $\text{R}^6\text{-R}^9$, $\text{R}^{11}\text{-R}^{21}$, R^{23} , R^{25} and $\text{R}^{27}\text{-R}^{29}$ are each independently:

- (1) hydrogen,
- (2) C1-8 alkyl,
- (3) C2-8 alkenyl,
- (4) C2-8 alkynyl,
- (5) Cyc 1, or
- (6) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by 1-5 substituent(s)

selected from (a) Cyc 1, (b) halogen, (c) $-\text{OR}^{30}$, (d) $-\text{SR}^{31}$, (e) $-\text{NR}^{32}\text{R}^{33}$, (f) $-\text{COOR}^{34}$, (g) $-\text{CONR}^{35}\text{R}^{36}$, (h) $-\text{NR}^{37}\text{COR}^{38}$, (i) $-\text{NR}^{39}\text{SO}_2\text{R}^{40}$ or (j) $-\text{N}(\text{SO}_2\text{R}^{40})_2$, or

R^7 and R^8 , R^{20} and R^{21} , R^{28} and R^{29} , taken together, are 1) C2-6 alkylene, 2) $-(\text{C2-6 alkylene})\text{-O-}(\text{C2-6 alkylene})\text{-}$, 3) $-(\text{C2-6 alkylene})\text{-S-}(\text{C2-6 alkylene})\text{-}$ or 4) $-(\text{C2-6 alkylene})\text{-NR}^{195}\text{-}(\text{C2-6 alkylene})\text{-}$,

R^{195} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R^{10} , R^{22} , R^{24} and R^{26} are each independently:

- (1) C1-8 alkyl,
- (2) C2-8 alkenyl,
- (3) C2-8 alkynyl,
- (4) Cyc 1, or
- (5) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by 1-5 substituent(s)

selected from (a) Cyc 1, (b) halogen, (c) $-\text{OR}^{30}$, (d) $-\text{SR}^{31}$, (e) $-\text{NR}^{32}\text{R}^{33}$, (f) $-\text{COOR}^{34}$, (g) $-\text{CONR}^{35}\text{R}^{36}$, (h) $-\text{NR}^{37}\text{COR}^{38}$, (i) $-\text{NR}^{39}\text{SO}_2\text{R}^{40}$ or (j) $-\text{N}(\text{SO}_2\text{R}^{40})_2$,

$\text{R}^{30}\text{-R}^{37}$ and R^{39} are each independently, hydrogen, C1-8 alkyl, Cyc 1 or C1-8 alkyl substituted by Cyc 1, or

R^{35} and R^{36} , taken together, are 1) C2-6 alkylene, 2) -(C2-6 alkylene)-O-(C2-6 alkylene)-, 3) -(C2-6 alkylene)-S-(C2-6 alkylene)- or 4) -(C2-6 alkylene)-NR¹⁹⁶-(C2-6 alkylene)-

R^{196} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R^{38} and R^{40} are each independently C1-8 alkyl, Cyc 1 or C1-8 alkyl substituted by Cyc 1,

Cyc 1 is a C3-15 mono, bi- or tri-(fused or spiro)carbocyclic ring or a 3-15 membered mono-, bi- or tri-(fused or spiro)cyclic hetero ring containing 1-4 nitrogen atom(s), 1-3 oxygen atom(s) and/or 1-3 sulfur atom(s),

Cyc 1 may be substituted by 1-5 of R^{51} ,

R^{51} is:

- (1) C1-8 alkyl,
- (2) C2-8 alkenyl,
- (3) C2-8 alkynyl,
- (4) halogen,
- (5) nitro,
- (6) trifluoromethyl,
- (7) trifluoromethoxy,
- (8) nitrile,
- (9) keto,
- (10) Cyc 2
- (11) -OR⁵²,
- (12) -SR⁵³,
- (13) -NR⁵⁴R⁵⁵,
- (14) -COOR⁵⁶,

(15) $-\text{CONR}^{57}\text{R}^{58}$,

(16) $-\text{NR}^{59}\text{COR}^{60}$,

(17) $-\text{SO}_2\text{NR}^{61}\text{R}^{62}$,

(18) $-\text{OCOR}^{63}$,

(19) $-\text{NR}^{64}\text{SO}_2\text{R}^{65}$,

(20) $-\text{NR}^{66}\text{COOR}^{67}$,

(21) $-\text{NR}^{68}\text{CONR}^{69}\text{R}^{70}$,

(22) $-\text{B}(\text{OR}^{71})_2$,

(23) $-\text{SO}_2\text{R}^{72}$,

(24) $-\text{N}(\text{SO}_2\text{R}^{72})_2$, or

(25) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by 1-5 substituent(s) selected from (a) halogen, (b) Cyc 2, (c) $-\text{OR}^{52}$, (d) $-\text{SR}^{53}$, (e) $-\text{NR}^{54}\text{R}^{55}$, (f) $-\text{COOR}^{56}$, (g) $-\text{CONR}^{57}\text{R}^{58}$, (h) $-\text{NR}^{59}\text{COR}^{60}$, (i) $-\text{SO}_2\text{NR}^{61}\text{R}^{62}$, (j) $-\text{OCOR}^{63}$, (k) $-\text{NR}^{64}\text{SO}_2\text{R}^{65}$, (l) $-\text{NR}^{66}\text{COOR}^{67}$, (m) $-\text{NR}^{68}\text{CONR}^{69}\text{R}^{70}$, (n) $-\text{B}(\text{OR}^{71})_2$, (o) $-\text{SO}_2\text{R}^{72}$, (p) $-\text{N}(\text{SO}_2\text{R}^{72})_2$ or (q) keto,

$\text{R}^{52}-\text{R}^{62}$, R^{64} , R^{66} and $\text{R}^{68}-\text{R}^{71}$ are each independently 1) hydrogen, 2) C1-8 alkyl, 3) C2-8 alkenyl, 4) C2-8 alkynyl, 5) Cyc 2 or 6) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 2, $-\text{OR}^{73}$, $-\text{COOR}^{74}$ or $-\text{NR}^{75}\text{R}^{76}$, or

R^{57} and R^{58} , R^{61} and R^{62} , R^{69} and R^{70} , taken together, are 1) C2-6 alkylene, 2) $-(\text{C2-6 alkylene})-\text{O}-(\text{C2-6 alkylene})-$, 3) $-(\text{C2-6 alkylene})-\text{S}-(\text{C2-6 alkylene})-$ or 4) $-(\text{C2-6 alkylene})-\text{NR}^{197}-(\text{C2-6 alkylene})-$,

R^{197} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R^{63} , R^{65} , R^{67} and R^{72} are each independently 1) C1-8 alkyl, 2) C2-8 alkenyl, 3) C2-8 alkynyl, 4) Cyc 2 or 5) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 2, $-\text{OR}^{73}$, $-\text{COOR}^{74}$ or $-\text{NR}^{75}\text{R}^{76}$,

R^{73} - R^{76} are independently hydrogen, C1-8 alkyl, Cyc 2 or C1-8 alkyl substituted by Cyc 2,

Cyc 2 has the same meaning as Cyc 1,

Cyc 2 may be substituted by 1-5 of R^{77} ,

R^{77} is:

- 1) C1-8 alkyl,
- 2) halogen,
- 3) nitro,
- 4) trifluoromethyl,
- 5) trifluoromethoxy,
- 6) nitrile,
- 7) $-OR^{78}$,
- 8) $-NR^{79}R^{80}$,
- 9) $-COOR^{81}$,
- 10) $-SR^{82}$,
- 11) $-CONR^{83}R^{84}$,
- 12) C2-8 alkenyl,
- 13) C2-8 alkynyl,
- 14) keto,
- 15) Cyc 6,
- 16) $-NR^{161}COR^{162}$,
- 17) $-SO_2NR^{163}R^{164}$,
- 18) $-OCOR^{165}$,
- 19) $-NR^{166}SO_2R^{167}$,
- 20) $-NR^{168}COOR^{169}$,

21) $\text{-NR}^{170}\text{CONR}^{171}\text{R}^{172}$,

22) $\text{-SO}_2\text{R}^{173}$,

23) $\text{-N(SO}_2\text{R}^{167})_2$, or

24) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by 1-5 substituent(s) selected from (a) halogen, (b) -OR^{78} , (c) $\text{-NR}^{79}\text{R}^{80}$, (d) -COOR^{81} , (e) -SR^{82} , (f) $\text{-CONR}^{83}\text{R}^{84}$, (g) keto, (h) Cyc 6, (i) $\text{-NR}^{161}\text{COR}^{162}$, (j) $\text{-SO}_2\text{NR}^{163}\text{R}^{164}$, (k) -OCOR^{165} , (l) $\text{-NR}^{166}\text{SO}_2\text{R}^{167}$, (m) $\text{-NR}^{168}\text{COOR}^{169}$, (n) $\text{-NR}^{170}\text{CONR}^{171}\text{R}^{172}$, (o) $\text{-SO}_2\text{R}^{173}$ or (p) $\text{-N(SO}_2\text{R}^{167})_2$,

$\text{R}^{78}\text{-R}^{84}$, $\text{R}^{161}\text{-R}^{164}$, R^{166} , R^{168} and $\text{R}^{170}\text{-R}^{172}$ are each independently (a) hydrogen, (b) C1-8 alkyl, (c) C2-8 alkenyl, (d) C2-8 alkynyl, (e) Cyc 6 or (f) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 6, -OR^{174} , -COOR^{175} , $\text{-NR}^{176}\text{R}^{177}$ or $\text{-CONR}^{178}\text{R}^{179}$, or

R^{83} and R^{84} , R^{163} and R^{164} , R^{171} and R^{172} , taken together, are 1) C2-6 alkylene, 2) $\text{-(C2-6 alkylene)-O-(C2-6 alkylene)-}$, 3) $\text{-(C2-6 alkylene)-S-(C2-6 alkylene)-}$ or 4) $\text{-(C2-6 alkylene)-NR}^{198}\text{-(C2-6 alkylene)-}$,

R^{198} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R^{165} , R^{167} , R^{169} and R^{173} are each independently (a) C1-8 alkyl, (b) C2-8 alkenyl, (c) C2-8 alkynyl, (d) Cyc 6 or (e) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 6, -OR^{174} , -COOR^{175} , $\text{-NR}^{176}\text{R}^{177}$ or $\text{-CONR}^{178}\text{R}^{179}$,

$\text{R}^{174}\text{-R}^{177}$ are each independently (1) hydrogen, (2) C1-8 alkyl, (3) Cyc 6 or (4) C1-8 alkyl substituted by Cyc 6, or

R^{178} and R^{179} , taken together, are 1) C2-6 alkylene, 2) $\text{-(C2-6 alkylene)-O-(C2-6 alkylene)-}$, 3) $\text{-(C2-6 alkylene)-S-(C2-6 alkylene)-}$ or 4) $\text{-(C2-6 alkylene)-NR}^{199}\text{-(C2-6 alkylene)-}$,

R^{199} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

Cyc 6 is a C3-8 mono-carbocyclic ring or a 3-8 membered mono-cyclic hetero ring containing 1-4 nitrogen atom(s), 1-2 oxygen atom(s) and/or 1-2 sulfur atom(s),

Cyc 6 may be substituted by 1-5 of R^{180} ,

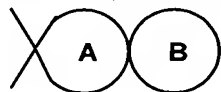
R^{180} is:

- (1) C1-8 alkyl,
- (2) halogen,
- (3) nitro,
- (4) trifluoromethyl,
- (5) trifluoromethoxy,
- (6) nitrile,
- (7) $-OR^{181}$,
- (8) $-NR^{182}R^{183}$,
- (9) $-COOR^{184}$,
- (10) $-SR^{185}$, or
- (11) $-CONR^{186}R^{187}$,

$R^{181}-R^{187}$ are each independently (1) hydrogen, (2) C1-8 alkyl, (3) phenyl or (4) C1-8 alkyl substituted by phenyl, or

R^{182} and R^{183} , R^{186} and R^{187} , taken together, are (1) C2-6 alkylene, (2) $-(C2-6 \text{ alkylene})-O-(C2-6 \text{ alkylene})-$, (3) $-(C2-6 \text{ alkylene})-S-(C2-6 \text{ alkylene})-$ or (4) $-(C2-6 \text{ alkylene})-NR^{200}-(C2-6 \text{ alkylene})-$,

R^{200} is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,



is (i) a fused bi-cyclic ring which A ring and B ring bound by two atoms or (ii) a spiro ring which A ring and B ring bound by spiro,

A ring is (i) a C5 or 6 partially or fully saturated carbocyclic ring or (ii) a 5 or 6 membered partially or fully saturated hetero ring containing 1-3 hetero atom(s) selected from a nitrogen atom(s), an oxygen atom(s) and/or a sulfur atom(s),

B ring is (i) a C4-7 partially or fully saturated carbocyclic ring or (ii) a 4-7 membered partially or fully saturated hetero ring containing 1-3 hetero atom(s) selected from a nitrogen atom(s), an oxygen atom(s) and/or a sulfur atom(s),

R² is:

(1) keto,

(2) thioketo,

(3) C1-8 alkyl,

(4) C2-8 alkenyl,

(5) C2-8 alkynyl,

(6) -OR⁹⁰,

(7) Cyc 3, or

(8) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by 1-5 substituent(s) selected from (a) halogen, (b) -OR⁹⁰, (c) -SR⁹¹, (d) -NR⁹²R⁹³, (e) -COOR⁹⁴, (f) -CONR⁹⁵R⁹⁶, (g) -NR⁹⁷COR⁹⁸, (h) -SO₂NR⁹⁹R¹⁰⁰, (i) -OCOR¹⁰¹, (j) -NR¹⁰²SO₂R¹⁰³, (k) -NR¹⁰⁴COOR¹⁰⁵, (l) -NR¹⁰⁶CONR¹⁰⁷R¹⁰⁸, (m) Cyc 3, (n) keto or (o) -N(SO₂R¹⁰³)₂,

R⁹⁰-R¹⁰⁰, R¹⁰², R¹⁰⁴ and R¹⁰⁶-R¹⁰⁸ are each independently (1) hydrogen, (2) C1-8 alkyl, (3) C2-8 alkenyl, (4) C2-8 alkynyl, (5) Cyc 3 or (6) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 3, or

R⁹⁵ and R⁹⁶, R⁹⁹ and R¹⁰⁰, R¹⁰⁷ and R¹⁰⁸, taken together, are (1) C2-6 alkylene, (2) -(C2-6 alkylene)-O-(C2-6 alkylene)-, (3) -(C2-6 alkylene)-S-(C2-6 alkylene)- or (4) -(C2-6 alkylene)-NR²⁰²-(C2-6 alkylene)-,

R²⁰² is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R¹⁰¹, R¹⁰³ and R¹⁰⁵ are each independently (1) C1-8 alkyl, (2) C2-8 alkenyl, (3) C2-8 alkynyl or (4) Cyc 3, or (5) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 3,

Cyc 3 has the same meaning as Cyc 1,

Cyc 3 may be substituted by 1-5 of R¹⁰⁹,

R¹⁰⁹ has the same meaning as R⁵¹,

R³ is:

(1) C1-8 alkyl,

(2) C2-8 alkenyl,

(3) C2-8 alkynyl,

(4) -COOR¹²⁰,

(5) -CONR¹²¹R¹²²,

(6) Cyc 4, or

(7) -OR¹²³,

(8) -COR¹³¹,

(9) -SO₂R¹³³, or

(10) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by a substituent(s) selected from (a) halogen, (b) nitrile, (c) Cyc 4, (d) -COOR¹²⁰, (e) -CONR¹²¹R¹²², (f) -OR¹²³, (g) -SR¹²⁴, (h) -NR¹²⁵R¹²⁶, (i) -NR¹²⁷COR¹²⁸, (j) -SO₂NR¹²⁹R¹³⁰, (k) -OCOR¹³¹, (l) -NR¹³²SO₂R¹³³, (m) -NR¹³⁴COOR¹³⁵, (n) -NR¹³⁶CONR¹³⁷R¹³⁸ or (o) keto,

R¹²⁰-R¹³⁰, R¹³², R¹³⁴ and R¹³⁶-R¹³⁸ are each independently (1) hydrogen, (2) C1-8 alkyl, (3) C2-8 alkenyl, (4) C2-8 alkynyl, (5) Cyc 4 or (6) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 4, halogen, -OR¹⁴⁸, -SR¹⁴⁹, -COOR¹⁵⁰ or -NHCOR¹⁴¹, or

R¹²¹ and R¹²², R¹²⁹ and R¹³⁰, R¹³⁷ and R¹³⁸, taken together, are 1) C2-6 alkylene, 2) -(C2-6 alkylene)-O-(C2-6 alkylene)-, 3) -(C2-6 alkylene)-S-(C2-6 alkylene)- or 4) -(C2-6 alkylene)-NR²⁰²-(C2-6 alkylene)-,

R²⁰² is hydrogen, C1-8 alkyl, phenyl or C1-8 alkyl substituted by phenyl,

R^{131} , R^{133} and R^{135} are each independently (1) C1-8 alkyl, (2) C2-8 alkenyl, (3) C2-8 alkynyl, (4) Cyc 4 or (5) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 4, halogen, $-OR^{148}$, $-SR^{149}$, $-COOR^{150}$ or $-NHCOR^{141}$,

R^{141} is (1) C1-8 alkyl, (2) C2-8 alkenyl, (3) C2-8 alkynyl, (4) Cyc 4 or (5) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 4,

R^{148} - R^{150} are each independently (1) hydrogen, (2) C1-8 alkyl, (3) C2-8 alkenyl, (4) C2-8 alkynyl, (5) Cyc 4 or (6) C1-8 alkyl, C2-8 alkenyl or C2-8 alkynyl substituted by Cyc 4,

Cyc 4 has the same meaning as Cyc 1,

Cyc 4 may be substituted by 1-5 of R^{144} ,

R^{144} has the same meaning as R^{51} ,

m is 0-5,

n is 0-5,

when m is 2-5, then R^2 of m are the same or different,

when n is 2-5, then R^3 of n are the same or different,

a quaternary ammonium salt thereof, an N-oxides thereof or a non-toxic salt thereof.

2. (Original) The compound according to claim 1, which is

- (1) (3R)-1-butyl-2,5-dioxo-3,4-(2-thiapropano)-9-[(1,4-benzodioxan-6-yl)methyl]-1,4,9-triazaspiro[5.5]undecane,
- (2) (3R)-1-butyl-2,5-dioxo-3,4-(2-thiapropano)-9-[(4-phenoxyphenyl)methyl]-1,4,9-triazaspiro[5.5]undecane,
- (3) (3S)-1-(2-methylpropyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (4) (3S)-1-(1-benzyl-4-piperidiny)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,

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- (5) (3S)-1-(2,2-diphenylpropyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (6) 1-(2-furanylmethyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (7) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (8) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (9) 1,9-dibenzyl-2,5-dioxo-3,4-propano-1,4,9-triazaspiro[5.5]undecane,
- (10) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (11) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (12) 1-propyl-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (13) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
- (14) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (15) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (16) 1-benzyl-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (17) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (18) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (19) 1-propyl-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (20) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-(2-phenylethyl)-1,4,9-triazaspiro[5.5]undecane,
- (21) 1-(2-furanylmethyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
- (22) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
- (23) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
- (24) 1-benzyl-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
- (25) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
- (26) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,

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- (27) 1-propyl-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
(28) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-(3-phenylpropyl)-1,4,9-triazaspiro[5.5]undecane,
(29) 1-(2-furanylmethyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(30) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(31) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(32) 1-benzyl-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(33) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(34) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(35) 1-propyl-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(36) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-(4-phenylbutyl)-1,4,9-triazaspiro[5.5]undecane,
(37) 1-(2-furanylmethyl)-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(38) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(39) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(40) 1-benzyl-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(41) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(42) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(43) 1-propyl-2,5-dioxo-3,4-propano-9-phenyl-1,4,9-triazaspiro[5.5]undecane,
(44) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(45) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(46) 1-benzyl-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(47) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(48) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,

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- (49) 1-propyl-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(50) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-(5-phenylpentyl)-1,4,9-triazaspiro[5.5]undecane,
(51) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(52) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(53) 1-benzyl-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(54) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(55) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(56) 1-propyl-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(57) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(58) 1-(2-furanylmethyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(59) 1-(2-tetrahydrofuranylmethyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(60) 1-(2-(3-indole)ethyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(61) 1-benzyl-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(62) 1-(2,2-diphenylethyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(63) 1-(2-phenylethyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(64) 1-propyl-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(65) 1-(1-benzyl-3-pyrrolidinyl)-2,5-dioxo-3,4-propano-9-methyl-1,4,9-triazaspiro[5.5]undecane,
(66) (3S)-1-propyl-2,5-dioxo-3,4-((2R)-2-benzyloxy-1,3-propano)-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(67) (3R)-1-propyl-2,5-dioxo-3,4-(2-thiapropano)-9-(6-phenylhexyl)-1,4,9-triazaspiro[5.5]undecane,
(68) 1-butyl-2,5-dioxo-3,3-butano-9-benzyl-1,4,9-triazaspiro[5.5]undecane,
(69) 1-butyl-2,5-dioxo-3,3-butano-1,4,9-triazaspiro[5.5]undecane, or
(70) 1-butyl-2,5-dioxo-3,3-butano-9-[4-(4-methylcarbamoylphenoxy)benzyl]-1,4,9-triazaspiro[5.5]undecane,

a quaternary ammonium salt thereof, an N-oxide thereof or a non-toxic salt thereof.

3. (Currently Amended) A pharmaceutical composition comprising the triazaspiro[5.5]undecane derivative of the formula (I) according to claim 1, a quaternary ammonium salt thereof, an N-oxide thereof or a non-toxic salt thereof, as an active ingredient, and a pharmaceutically acceptable carrier.

4. (Currently Amended) ~~A~~ The pharmaceutical composition according to claim 3, which is a chemokine/chemokine regulator ~~comprising the triazaspiro[5.5]undecane derivative of the formula (I) according to claim 1, a quaternary ammonium salt thereof, an N-oxide thereof or a non-toxic salt thereof, as an active ingredient.~~

5. (Currently Amended) A method for prevention and/or treatment ~~agent~~ for asthma, atopic dermatitis, urticaria, allergic bronchopulmonary aspergillosis, allergic eosinophilic gastroenteritis, nephritis, nephropathy, hepatitis, arthritis, rheumatoid arthritis, psoriasis, rhinitis, conjunctivitis, ischemic reperfusion disorder, multiple sclerosis, ulcerative colitis, adult respiratory distress syndrome, cytotoxic shock, diabetes, autoimmune disease, multiple organ failure, immunosuppression, cancer metastasis and acquired immune deficiency syndrome, comprising administering to a subject in need thereof an effective amount of the triazaspiro[5.5]undecane derivative of the formula (I) according to claim 1, a quaternary ammonium salt thereof, an N-oxide thereof or a non-toxic salt thereof, ~~as an active ingredient.~~